

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Section 90.20(e)(6) of the	)	WT Docket No. 01-97
Commission's Rules to revise the Authorized	)	RM- 9798
Duty Cycle on 173.075 MHz	)	

**REPORT AND ORDER**

**Adopted: August 9, 2002**

**Released: September 5, 2002**

By the Commission:

**I. INTRODUCTION**

1. In this *Report and Order*, we address the proposal set forth in the *Notice of Proposed Rulemaking (Notice)* in WT Docket No. 01-97.<sup>1</sup> In the *Notice*, the Commission sought comment on whether to revise the duty cycle specifications for stolen vehicle recovery system (SVRS) operations on 173.075 MHz.<sup>2</sup> The *Notice* also invited comment on whether the public interest continues to be served by specification of duty cycles for the SVRS operations on 173.075 MHz.<sup>3</sup> For the reasons explained below, we are revising Section 90.20(e)(6) of the Commission's Rules<sup>4</sup> to add a new duty cycle option of 1800 milliseconds every 300 seconds with a maximum of six messages in any thirty-minute period.<sup>5</sup> We believe that this new duty cycle option will enable the enhancement of police performance in the recovery of stolen vehicles and apprehension of suspects, while ensuring that harmful interference does not occur to television reception.<sup>6</sup>

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<sup>1</sup> Amendment of Section 90.20(e)(6) of the Commission's Rules to revise the Authorized Duty Cycle on 173.075 MHz, *Notice of Proposed Rulemaking*, WT Docket No. 01-97, 16 FCC Rcd 9998 (2001) (*Notice*).

<sup>2</sup> This proceeding was initiated by LoJack Corporation (LoJack). See LoJack Petition for Rulemaking, RM-9798 (filed Dec. 20, 1999) (Petition).

<sup>3</sup> *Notice*, 16 FCC Rcd at 10003 ¶ 12.

<sup>4</sup> 47 C.F.R. § 90.20(e)(6).

<sup>5</sup> LoJack proposed amendment of 47 C.F.R. § 90.20(e)(6) to add the 1800 milliseconds duty cycle to the current rule. See Petition at 1.

<sup>6</sup> LoJack is currently operating under the proposed duty cycle pursuant to a rule waiver that was granted subject to the outcome of this proceeding. See In the Matter of LoJack Corporation, Request for Waiver of Section 90.20(e)(6) of the Commission's Rules, *Order*, 15 FCC Rcd 18939 (WTB PSPWD 2000) (*Waiver Order*).

## II. BACKGROUND

2. In 1986, LoJack Corporation (LoJack) and the Massachusetts Department of Public Safety were granted experimental authority to operate and conduct a market test of a SVRS in Massachusetts.<sup>7</sup> In 1988, the Commission granted LoJack authority to expand its experiment to Florida.<sup>8</sup> The following year, the Commission designated the frequency 173.075 MHz for SVRS use, and established service rules for these systems.<sup>9</sup> In doing so, the Commission recognized that there was potential for interference from SVRS base stations to broadcast operations on Television (TV) Channel 7, but it concluded that the interference potential could be made minimal.<sup>10</sup> In furtherance of its effort to minimize the interference risk, the Commission required SVRS operators to perform an analysis of potential interference to TV Channel 7 viewers and to develop a plan to correct any interference.<sup>11</sup>

3. After the SVRS designation in 1989, the Commission authorized LoJack's operation on a regular basis.<sup>12</sup> LoJack has developed and operated a stolen vehicle recovery network with state and local police departments across the nation.<sup>13</sup> According to LoJack, its system has been deployed in seventeen states, as well as the District of Columbia, and has been installed in approximately 1.25 million vehicles,<sup>14</sup> and assisted in the recovery of more than 30,000 vehicles.<sup>15</sup> Additionally, LoJack states that it is the most extensive radio-based SVRS in the world.<sup>16</sup> Although the Commission licenses SVRS at 173.075 MHz on a shared, nonexclusive basis, LoJack is currently is the only SVRS operator in the United States.

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<sup>7</sup> Prior to that time, the Massachusetts Department of Public Safety had been operating this system experimentally under the auspices of the Federal Bureau of Investigation of the U.S. Department of Justice. *See* Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Stolen Vehicle Recovery Systems, *Notice of Proposed Rulemaking*, Gen. Docket No. 88-566, 3 FCC Rcd 7195, 7195 ¶ 2 (1988).

<sup>8</sup> *Id.*

<sup>9</sup> *See* Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Stolen Vehicle Recovery Systems, *Report and Order*, Gen. Docket No. 88-566, 4 FCC Rcd 7558, 7558 ¶ 1 (1989) (*SVRS Report and Order*).

<sup>10</sup> *Id.* at 7560 ¶ 27.

<sup>11</sup> This analysis of potential interference is required whenever an SVRS base station is located within 105 miles of a TV Channel 7 transmitter. Where interference is projected to more than 100 viewers at a particular site, the applicant must show that no other suitable location is available. In addition to the development of a plan to correct any interference, the applicant must indicate that adjustments to viewers' TV receivers will be made to correct any interference. *Id.* *See* 47 C.F.R. § 90.20(e)(6)(i), (ii), (iii).

<sup>12</sup> LoJack Comments (filed July 12, 2002) (Comments) at 1.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> These vehicles have an estimated total value of more than \$500,000,000. *Id.* at 1.

<sup>16</sup> LoJack systems are also in place in eighteen foreign countries, including the United Kingdom, South Africa, Korea, China, Poland, Russia, Mexico, Argentina and Columbia. *Id.* at 1-2.

4. Section 90.20(e)(6) of the Commission's Rules provides that the frequency 173.075 MHz is available for SVRS operations on a shared basis with the Federal Government. SVRS operations may be conducted only to recover stolen vehicles and not for any other use.<sup>17</sup> The rule limits mobile transmitters operating on 173.075 MHz to 2.5 watts power output and limits base transmitters to 300 watts effective radiated power (ERP). Transmissions from mobile units are limited to 200 milliseconds every ten seconds, or 200 milliseconds every second when a vehicle is being tracked actively (the 200 milliseconds cycle). With the 200 milliseconds cycle, vehicles are fitted with a transponder unit (TU) which remains dormant until an owner reports a vehicle theft. Once a stolen vehicle report is submitted, the police send a message to a central law enforcement computer, which causes a network of radio base stations licensed to the police to broadcast a message that instructs the TU to begin transmitting a brief "tracking" message. Activation messages are transmitted by each base station every fifteen minutes for the first two hours, then once an hour thereafter until the vehicle is recovered or thirty days have passed, whichever is sooner. The tracking message contains a unique reply code that is received by tracking computers in police cars. Police identify the vehicle make, model and registration from the reply code and then track and recover the stolen vehicle.<sup>18</sup>

5. Initially, LoJack had operated a stolen vehicle recovery network using the 200 milliseconds cycle. However, under its waiver grant of August 28, 2000, LoJack has been permitted—contingent on the outcome of this rulemaking proceeding—to utilize a duty cycle of 1800 milliseconds every 300 seconds (the 1800 milliseconds cycle), which facilitates operation of LoJack's "Early Warning Detector" (EWD).<sup>19</sup> When activated, the EWD will detect external movements of the vehicle or determine that the vehicle has been started without using a key (*i.e.*, "hot-wired"), and thereupon instruct the TU to transmit an alert message. The nearest base station will process and forward the message to the LoJack central control center, whereupon LoJack personnel will alert the car owner that the vehicle is possibly being stolen. These TU "uplink" transmissions, which must be limited to six messages per mobile unit in any thirty-minute period,<sup>20</sup> also can be used to acknowledge base station activation and deactivation messages. By comparison, there is no "uplink" transmission in the current 200 milliseconds cycle system and, as such, there is no way to determine when a mobile unit has been activated or deactivated. Consequently, base stations continue to transmit the activation/deactivation messages until the theft recovery activity is complete.<sup>21</sup> In this connection, we note that LoJack has operated the 1800 milliseconds cycle technology since 1999, under a conditional waiver, and the record before us does not indicate any reports of interference problems.<sup>22</sup>

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<sup>17</sup> On reconsideration, the Commission clarified certain aspects of the *SVRS Report and Order*. At that time, the Commission determined that tracking prior to the filing of a police report is considered permissible under Section 90.20(e)(6) of the Commission's Rules. See Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Stolen Vehicle Recovery Systems, Gen. Docket No. 88-566, *Memorandum Opinion and Order*, 6 FCC Rcd 622, 623 ¶ 10 (1991).

<sup>18</sup> Petition at 2.

<sup>19</sup> See *supra* note 6.

<sup>20</sup> Notice, 16 FCC Rcd at 10001 ¶ 5.

<sup>21</sup> *Id.* at 10001 ¶ 7.

<sup>22</sup> See *supra* note 6.

### III. DISCUSSION

6. *Notice of Proposed Rulemaking.* The Commission proposed to revise Section 90.20(e)(6)<sup>23</sup> to reflect current technological advancements that will benefit law enforcement and vehicle owners. The Commission noted that the current duty cycle provisions, which were adopted in 1989, may no longer meet the needs of SVRS operations. The Commission noted that the 200 milliseconds cycle is incompatible with a new SVRS technology that can significantly benefit the public and the law enforcement community.<sup>24</sup> In this connection, the Commission proposed to add the 1800 milliseconds duty cycle<sup>25</sup> to the rule, noting that SVRS employment of the proposed 1800 milliseconds cycle could greatly reduce the lag time between when a vehicle is discovered stolen and when the theft is reported to the police.<sup>26</sup>

7. The Commission invited comment on the merits of revising the duty cycle to permit use of the new technology, specifically the associated public interest and public safety benefits.<sup>27</sup> Interested parties also were asked to address whether adoption of the proposal would advance efficient spectrum utilization,<sup>28</sup> and if the proposal presented any concerns regarding interference to digital, as well as analog, broadcast operations on TV Channel 7.<sup>29</sup> Comment was particularly sought regarding any interference experienced as a result of LoJack's modified operation under its current rule waiver.<sup>30</sup> Additionally, parties were asked to comment on whether the public interest continues to be served by specification of the relevant duty cycles in our Rules.<sup>31</sup> Specifically, comment was invited on whether interference concerns, encouragement of a competitive SVRS marketplace and spectrum efficiency continued to merit specifying duty cycles.<sup>32</sup> Commenters favoring removal of duty cycle limits were requested to explain the possible effect on the sharing of 173.075 MHz by the Federal Government, given that this is a shared frequency.<sup>33</sup>

8. *Comments.* LoJack was the only commenter filing a response to the *Notice*. It supports the proposal to revise the duty cycle requirements of Section 90.20(e)(6) of the Commission's Rules by

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<sup>23</sup> *Id.* at 10001 ¶ 8.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 10001-02 ¶ 9.

<sup>28</sup> *Id.* at 10002 ¶ 10.

<sup>29</sup> *Id.* at 10002-03 ¶ 11.

<sup>30</sup> *Id.*

<sup>31</sup> *Id.* at 10003-04 ¶ 12.

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

permitting an alternate duty cycle for SVRS mobile station “uplink” transmissions.<sup>34</sup> LoJack submits that this increased “uplink” duty cycle will enable it to equip its systems with an early warning feature that speeds detection of stolen vehicles.<sup>35</sup> Additionally, LoJack asserts that this rule modification will dramatically reduce the need for higher power base stations to transmit “downlink” signals.<sup>36</sup> It also contends that the revised duty cycle will not result in harmful interference to Channel 7 Digital Television stations as indicated by a previously filed engineering analysis<sup>37</sup> incorporated by reference.<sup>38</sup> As an alternative, LoJack favors eliminating all duty cycle requirements in order to provide flexibility for innovation in the SVRS service.<sup>39</sup> It submits that a mobile station duty cycle is not needed to protect TV Channel 7 operations from interference because base station transmissions rather than mobile ones are of import in this regard.<sup>40</sup> Further, LoJack argues that a base station duty cycle is unnecessary because current rule provisions<sup>41</sup> adequately protect TV reception from harmful interference.<sup>42</sup> Even if all duty cycle limits are removed, LoJack submits, we need have no concerns regarding a competitive SVRS marketplace because SVRS licensees are public safety organizations guided by the well being of the public.<sup>43</sup> Finally, LoJack states that no instance has occurred in which a Federal Government user was adversely affected by its SVRS system and there is no reason to believe that eliminating duty cycle limits will impact this state of affairs.<sup>44</sup>

9. *Decision.* We find that the record warrants adopting the proposal to amend Section 90.20(e)(6) of the Commission’s Rules by authorizing an alternate duty cycle for SVRS mobile operations on 173.075 MHz. Adding a new duty cycle option of 1800 milliseconds every 300 seconds

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<sup>34</sup> *Id.* at 2.

<sup>35</sup> *Id.* at 3-4.

<sup>36</sup> *Id.*

<sup>37</sup> Comments on the 1800 milliseconds proposal were submitted in response to LoJack’s waiver request. *See* Request for Waiver by LoJack Corporation to Permit Stolen Vehicle Recovery System Operation With Different Duty Cycle, *Public Notice*, 15 FCC Rcd 15741 (WTB PSPWD 2000). A TV Channel 7 broadcaster, Cosmos Broadcasting Corporation (Cosmos), initially opposed LoJack’s waiver request on the basis that the information provided by LoJack was insufficient to draw a reasonable conclusion about the impact of LoJack’s proposal on Digital Television (DTV) stations. After LoJack subsequently provided Cosmos with an engineering analysis that concluded that harm to DTV operations was unlikely to result from LoJack’s proposed operation, Cosmos withdrew its objection. *See* Cosmos Broadcasting Corporation Further Comments (filed May 30, 2000) at Attachment, Potential for Interference to DTV Reception from LoJack Transmissions, May 9, 2000; *Waiver Order*, 15 FCC Rcd at 18942 ¶ 7.

<sup>38</sup> Comments at 4.

<sup>39</sup> *Id.* at 5-6.

<sup>40</sup> *Id.* at 6-7.

<sup>41</sup> *See supra*, note 11.

<sup>42</sup> Comments at 7.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

(with a maximum of six messages in any thirty-minute period) to the current duty cycle of 200 milliseconds every ten seconds enables the use of an SVRS technological advancement. Specifically, the record reflects that allowing the new duty cycle permits SVRS operations that incorporate an early warning feature that minimizes lag time and thereby assists, among other things, in the recovery of a stolen vehicle. The current mobile duty cycle was adopted more than a decade ago when the frequency 173.075 MHz was first designated for SVRS use.

10. The merits of the proposal to add the 1800 milliseconds duty cycle to Section 90.20(e)(6) of the Commission's Rules appear to be unequivocal. In this regard, we believe that adoption of this proposal will result in public safety and public interest benefits. The report of theft to the police triggers the active tracking of a stolen vehicle in the SVRS network (no matter whether the old or the new technology is used).<sup>45</sup> However, the sooner a theft is detected and a report filed, the greater the chance of recovering the vehicle and apprehending the thief.<sup>46</sup> Under the proposed rule change, the mobile-to-base "uplink" transmissions are used to alert a control center whose personnel, in turn, alert the vehicle owner that his or her vehicle has been moved without consent.<sup>47</sup> Thus, a vehicle theft is detected immediately, which gives the owner the ability to notify the police immediately.<sup>48</sup> By comparison, under the old technology, the stolen vehicle is not tracked until the vehicle owner discovers the theft and reports it to the police. This may not occur for hours or days after the theft. By expediting the theft detection and reporting process, the new technology significantly improves tracking efficiency and the chances for successful vehicle recovery.<sup>49</sup>

11. In addition, we find that increased spectrum efficiency is an additional benefit to be realized by allowing utilization of new 1800 milliseconds cycle technology for recovery of stolen vehicles. While the "uplink" transmission path incorporates the early warning feature, it also serves to acknowledge base station activation and deactivation messages. Specifically, mobile units using the 1800 milliseconds cycle are capable of transmitting acknowledgements to instructions received from a base station.<sup>50</sup> Upon receiving an acknowledgement, each affected base station can cease transmitting additional unnecessary messages, thereby reducing significantly the number of base station transmissions associated with each theft recovery activity.<sup>51</sup> Thus, the slightly longer low-power (2.5 watt ERP) mobile-to-base transmissions that the new duty cycle would permit, in turn, would allow a substantial reduction in the number of high-power (300 watt ERP) base station transmissions.<sup>52</sup> In practice, it would appear that use

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<sup>45</sup> Under the new technology, the stolen vehicle recovery system is activated by unauthorized movement; whereas, under the old technology the stolen vehicle could not be tracked until the vehicle owner discovered the theft.

<sup>46</sup> Comments at 4.

<sup>47</sup> *Id.* at 4-5.

<sup>48</sup> *Id.* at 5.

<sup>49</sup> *Id.* In this connection, we note LoJack's statements that experience in utilizing the early warning detector substantiates the view that this new technology enhances crime control and augments police investigative ability. According to LoJack, when it introduced this new technology in South Africa, the vehicle recovery rate improved by ten percent (from 82 to 92 percent). *Id.* at 4, 5.

<sup>50</sup> *Id.* at 3-4

<sup>51</sup> *Id.* at 4.

<sup>52</sup> *Id.* at 3.

of this new SVRS feature reduces the number of downlink transmissions from 889 to as few as nine.<sup>53</sup> The effect of using the new technology is a dramatic decrease in the overall level of radiated power of the signals in the band and a significant reduction in channel occupancy.<sup>54</sup>

12. In regard to interference matters, we conclude that the revised duty cycle will not have a negative impact on the reception of television transmissions.<sup>55</sup> Rather, use of the new 1800 milliseconds cycle will likely reduce the possibility of harmful interference to television reception.<sup>56</sup> Since an SVRS system transmits on a frequency of 173.075 MHz with an authorized bandwidth of 20 kHz, we have considered whether the early warning feature would cause harmful interference to reception of transmissions broadcast by TV Channel 7 (174-180 MHz).<sup>57</sup> In this connection, the results of an independent engineering study indicate that harm to DTV operations is unlikely to result when DTV transmission replaces the current NTSC transmission standard.<sup>58</sup> Power and proximity largely determine the possibility of interference to TV Channel 7 transmissions. Thus, it is the base station sites operating with 300 watts ERP, and not the 2.5 watt ERP mobile (transponder) units, that are of greater consequence in this matter. Nevertheless, transmissions by mobile units have been, and will continue to be, restricted to reduce the impact of any potential interference from mobile units to TV Channel 7 reception.

13. While use of the new technology requires an increase in the duty cycle to permit an “uplink” signal once every 300 seconds, it will be limited to six transmissions in any thirty minutes. No increase is needed in the length or the duty cycle of the tracking signal. Thus, use of the 1800 milliseconds cycle will not significantly increase the number of mobile transmissions, and the possibility of interference from mobile units to TV Channel 7 will not significantly increase. Conversely, the new duty cycle will greatly reduce the number of base station transmissions needed for a typical stolen vehicle recovery sequence. We note that no interference concerns have been reported though, in the *Notice*, we invited comment on whether any interference had been experienced as a result of LoJack’s modified operations under the current waiver.<sup>59</sup>

14. As to whether the public interest continues to be served by specification of SVRS duty cycles, we believe that the duty cycle for mobile units is still needed to minimize the interference potential from the mobile transmitters to TV broadcast Channel 7 operations.<sup>60</sup> Additionally, the base

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<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> The interference concern was raised by Cosmos in the waiver proceeding. Upon the submission to Cosmos of the engineering analysis, Cosmos withdrew its opposition to the grant of LoJack’s waiver request. *See supra* note 37.

<sup>56</sup> LoJack submits that its new system is at least as compatible with Channel 7 DTV stations as it is with Channel 7 NTSC stations. Comments at 4.

<sup>57</sup> *Notice*, 16 FCC Rcd at 10002-03 ¶ 11. This interference issue first was considered when the SVRS service was established. *SVRS Report and Order*, 4 FCC Rcd at 7560-61 ¶¶ 19-28.

<sup>58</sup> The engineering analysis by Carl T. Jones, Jr., P.E., done on behalf of LoJack, was filed by Cosmos as an attachment to its Further Comments to LoJack’s waiver request. *See supra* note 31.

<sup>59</sup> *Notice*, 16 FCC Rcd at 10003 ¶ 11.

<sup>60</sup> *SVRS Report and Order*, 4 FCC Rcd at 7561 ¶ 34.

station duty cycle ensures that multiple licensees will be able to share the single frequency (173.075 MHz) that is available for SVRS operations.<sup>61</sup> Although LoJack states otherwise,<sup>62</sup> we continue to believe that the interference and competitive concerns merit specification of duty cycles for SVRS operations on 173.075 MHz. LoJack claims that a mobile station duty cycle is unnecessary to protect TV Channel 7 receivers because interference is sooner caused by a base station than by mobile units.<sup>63</sup> We, however, believe that harmful interference from mobiles can still occur; furthermore LoJack has not demonstrated that our belief is unfounded. Although the interference potential of the mobile unit is far less than that of the base station, we believe that extended transmissions or continuous carrier operations of mobile units could increase the possibility of harmful interference to TV Channel 7. Also, contrary to LoJack's claim,<sup>64</sup> the Commission's decision eliminating the duty cycle rule for the 218-219 MHz Service is not analogous to the situation here.<sup>65</sup> Although the two services occupy spectrum that is adjacent to TV frequencies, the SVRS frequency (173.075 MHz) is significantly closer to TV Channel 7 (174-180 MHz) than the 218-219 MHz spectrum is to TV Channel 13 (210-216 MHz). Furthermore, the duty cycle that formerly applied to 218-219 MHz Service was not designed—as it was for SVRS—as a principal method to minimize the interference potential of the 218-219 MHz Service.<sup>66</sup>

15. Further, we are not persuaded by LoJack's claim that other provisions in the SVRS rules, unrelated to duty cycles, mitigate any need to retain a base station duty cycle.<sup>67</sup> These provisions require that if interference is projected to 100 or more residences, an SVRS applicant show that the proposed site is the only suitable location, develop a plan to control interference to TV reception, and agree to make adjustments in TV receivers affected by SVRS operations to eliminate interference within thirty days of written notification by the Commission.<sup>68</sup> We do not believe that these provisions, which are reactive, in and of themselves, ensure that harmful interference from a base station does not occur. These rules largely pertain to what a licensee must do after it causes interference, rather than to what a licensee should

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<sup>61</sup> *Id.* at 7561 ¶ 35. As noted, licenses for SVRS on 173.075 MHz are issued on a shared, nonexclusive basis. Moreover, Section 90.20(e)(6) of the Commission's Rules permits competitive systems to be accommodated through time sharing of the frequency. Two or more separate licensees can operate base stations in the same geographical area by coordinating the timing of their base station transmissions. Coordination of the timing of transmissions can be accomplished informally between or among licensees. However, no coordination is needed between mobiles of multiple SVRSs because the powers are so low that interference is unlikely.

<sup>62</sup> Comments at 5-7.

<sup>63</sup> *Id.* at 6.

<sup>64</sup> *Id.*

<sup>65</sup> See Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, *Report and Order and Memorandum Opinion and Order*, WT Docket No. 98-169, 15 FCC Rcd 1497, 1551 ¶ 101 (1999).

<sup>66</sup> *Id.* As indicated above, the ability of 218-219 MHz licensees to design their systems to operate in a cycle that would not cause television interference, and to operate equipment that is sufficiently removed from television receivers to prevent interference, were not the only reasons the Commission removed the duty cycle for that service. See *Notice*, 16 FCC Rcd at 10003 n.38; Comments at 6.

<sup>67</sup> Comments at 7.

<sup>68</sup> 47 C.F.R. § 90.20(e)(6)(i), (ii), (iii).



do initially to avoid interference. They are but one component of our overall strategy to avoid the occurrence of harmful interference to TV Channel 7 reception. Indeed, as LoJack acknowledges,<sup>69</sup> interference from base stations usually is of greater consequence than from mobile units. Thus, we conclude that the public interest is better served by minimizing the potential for interference prior to its occurrence rather than afterwards.

16. In addition, LoJack contends that eliminating the duty cycle limits would not impair the Federal Government's use of 173.075 MHz.<sup>70</sup> In this connection, it submits that there has not been a single instance in which a Federal Government user was adversely affected by operation of LoJack's system. LoJack further asserts that the requirement that all base station applications be coordinated with the Federal Government is adequate to protect the Federal Government's use of 173.075 MHz.<sup>71</sup> Notwithstanding LoJack's claim, we believe that eliminating the base station duty cycle would potentially limit the ability of the Federal Government to share this frequency. The Federal Government uses this frequency in various locations around the country for fixed and mobile operations. We are concerned that were a base station not limited to a specific duty cycle, its transmissions could effectively monopolize the frequency for miles. This situation could exist even if the base station had previously been coordinated. In this connection, we note that LoJack does not address whether base stations previously coordinated with Federal Government users would need to be coordinated anew if the duty cycle was eliminated. Therefore, based on the record currently before us, we believe that retaining the base station duty cycle will ensure availability of the frequency 173.075 MHz for Federal Government use.

17. In sum, we invited comment on whether it is now appropriate to develop a rule permitting greater technical flexibility in the SVRS service.<sup>72</sup> In response, LoJack claims that eliminating the duty cycles would encourage research and development that would benefit consumers, the general public, and public safety organizations.<sup>73</sup> Furthermore, LoJack submits that the duty cycles impose an undue constraint on innovation in SVRS equipment.<sup>74</sup> The record, however, does not support these statements.<sup>75</sup> LoJack's assertion that SVRS licensees as public safety organizations are guided only by the public's well being and not commercial concerns<sup>76</sup> does not consider that retaining the base station duty cycle permits

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<sup>69</sup> *Id.* at 2.

<sup>70</sup> *Id.* at 7.

<sup>71</sup> *Id.*

<sup>72</sup> *Notice*, 16 FCC Rcd at 10003 ¶ 12.

<sup>73</sup> *Comments* at 5-6.

<sup>74</sup> *Id.* at 6. In establishing the SVRS service, the Commission did not require compatibility or protocol standards for SVRS operations. Stolen vehicle recovery technology was relatively new and the Commission believed that detailed standards might tend to stifle further technological standards. *See SVRS Report and Order*, 4 FCC Rcd at 7562 ¶ 38.

<sup>75</sup> LoJack was able under the grant of its waiver request, and without undue delay, to implement the new technology providing early warning to an owner that his vehicle may have been stolen. Yet, by retaining a duty cycle rule, the Commission continued to ensure that harmful interference to TV broadcast Channel 7 reception would be kept at a minimum.

<sup>76</sup> *Comments* at 7.

the commencement of competitive SVRS operations.<sup>77</sup> In adopting the SVRS rules, the Commission specifically determined that some restriction on duty cycle was necessary to permit multiple systems to share the single available frequency.<sup>78</sup> The Commission envisioned that “several systems” would time share the available frequency.<sup>79</sup> A competitive marketplace also has the potential to foster innovative technology and less expensive service to the public safety community and the general public. Moreover, as noted, the base duty cycle specification is spectrally efficient because it ensures the potential for multiple SVRS operators to share the single frequency (173.075 MHz). Thus, we are concerned that eliminating the base station duty cycle could impair the growth of a competitive SVRS marketplace, counter the goal of spectrum efficiency and potentially harmfully interfere with TV Channel 7 reception. Accordingly, we decline to delete the base station duty cycle.

#### IV. CONCLUSION

18. We believe that the public interest will be served by permitting the incorporation of an SVRS early warning feature. Therefore, we amend Section 90.20(e)(6) of the Commission’s Rules to add a duty cycle of 1800 milliseconds every 300 seconds, with a maximum of six messages in any thirty-minute period, when the system is activated by unauthorized movement. This rule change will facilitate more efficient law enforcement, a decrease in the time lag in the notification of a stolen vehicle, greater stolen vehicle recovery rates, and a greater rate of apprehension of criminals. It is our view that the specification of SVRS duty cycles continues to serve the public interest by preventing harmful interference to TV Channel 7 reception and encouraging a competitive marketplace for provision of SVRS operations.

#### V. PROCEDURAL MATTERS

##### Final Regulatory Flexibility Analysis

19. As required by the Regulatory Flexibility Act (RFA) of 1980,<sup>80</sup> the Commission has prepared a Final Regulatory Flexibility Analysis of the possible impact of the rule changes contained in this *Report and Order* on small entities. The Final Regulatory Flexibility Act analysis is set forth in Appendix A. The Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

##### Paperwork Reduction Analysis.

20. This *Report and Order* does not contain any new or modified information collection. Therefore, it is not subject to the requirements for a paperwork reduction analysis, and the Commission has not performed one.

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<sup>77</sup> In the earlier SVRS rulemaking proceeding, LoJack argued—and the Commission agreed—that competitive systems could be accommodated through time sharing of the frequency 173.075 MHz. *See SVRS Report and Order*, 4 FCC Rcd at 7560 ¶ 18.

<sup>78</sup> *See SVRS Report and Order*, 4 FCC Rcd at 7561 ¶ 35.

<sup>79</sup> *Id.*

<sup>80</sup> *See* 5 U.S.C. § 604.

**Contacts for Information**

21. For further information, contact Freda Lippert Thyden, Esq., Policy and Rules Branch, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau, (202) 418-0627, TTY (202) 418-7233, or via e-mail at <fthyden@fcc.gov>.

22. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-7365, or by e-mail at <bmillin@fcc.gov>. This *Report and Order* can be downloaded at <<http://www.fcc.gov/dtf>>.

**VI. ORDERING CLAUSES**

23. Authority for issuance of this *Report and Order* is contained in Sections 4(i), 4(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), and 303(r).

24. Accordingly, IT IS ORDERED that, pursuant to the authority of Sections 4(i), 4(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), and 303(r), Section 90.20(e)(6) of the Commission's Rules, 47 C.F.R. § 90.20(e)(6), IS AMENDED as set forth in Appendix B, effective 30 days after publication in the Federal Register.

25. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

26. IT IS FURTHER ORDERED that this proceeding IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX A

## FINAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act (RFA),<sup>1</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in Appendix A of the *Notice of Proposed Rulemaking (NPRM)* issued in this proceeding.<sup>2</sup> The Commission sought written public comment on the proposals in the *NPRM*, including on the IRFA. The Commission's Final Regulatory Flexibility Analysis (FRFA) in this *Report and Order* in WT Docket No. 97-82 conforms to the RFA.<sup>3</sup>

**I. Need for, and Objectives of, the *Report and Order***

1. In the *Report and Order*, we modify the duty cycle for mobile transmissions in stolen vehicle recovery systems (SVRSs) contained in 47 CFR § 90.20(e)(6) to 1800 milliseconds every three hundred seconds to permit use of new technology. This modification is in the public interest because it enhances the efficient use of spectrum and permits greater efficiency in use of police resources to track and recover stolen vehicles and apprehend more individuals involved in such activities.

**II. Summary of Significant Issues Raised by Public Comments in Response to the IRFA**

2. No comments were filed in direct response to the IRFA.

**III. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply**

3. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.<sup>4</sup> The RFA defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small business concern" under Section 3 of the Small Business Act.<sup>5</sup> A small business concern is one that: (1) is independently owned and operated, (2) is not dominant in its field of operation, and (3) satisfies any additional criteria established by the Small Business Administration.<sup>6</sup> Nationwide, as of 1992, there were approximately 275,801 small organizations.<sup>7</sup> "Small governmental jurisdiction" generally means governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000."<sup>8</sup>

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<sup>1</sup> See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

<sup>2</sup> See Amendment of Section 90.20(e)(6) of the Commission's Rules to Revise the Authorized Duty Cycle on 173.075 MHz, *Notice of Proposed Rulemaking*, WT Docket No. 01-97, 16 FCC Rcd 9998, 10006 (2001) (*NPRM*).

<sup>3</sup> See 5 U.S.C. § 604.

<sup>4</sup> 5 U.S.C. § 603(b)(3).

<sup>5</sup> *Id.* § 601(b)(3).

<sup>6</sup> *Id.* § 632.

<sup>7</sup> 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to Office of Advocacy of the U.S. Small Business Administration).

<sup>8</sup> 5 U.S.C. § 601(5).

4. The rule change adopted in this *Report and Order* will provide marketing opportunities for radio manufacturers, some of which may be small businesses. Beyond this we are unable to quantify the potential effects on small entities.

#### **IV. Description of Reporting, Recordkeeping, and Other Compliance Requirements**

5. No new reporting, recordkeeping, or other compliance requirements would be imposed on applicants or licensees as a result of the actions taken in this rulemaking proceeding.

#### **V. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered**

6. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities. 5 U.S.C. §603.

7. As an alternative, the Commission considered eliminating specified duty cycles for SVRS mobile and base transmitters. However, the Commission determined that the public interest continues to be served by retention of these duty cycles. The mobile duty cycle ensures that harmful interference to TV Channel 7 reception will not occur, while the base station duty cycle permits the growth of a competitive SVRS marketplace. The rule change adopted will accommodate the use of an early warning detector and, thus, enhance police performance in the recovery of stolen vehicles and apprehension of individuals suspected of committing these thefts.

8. Amendment of the duty cycle rule does not impose any new reporting or compliance requirements, however, it does permit an additional use of SVRS technology. The proposal contained herein has been analyzed with respect to the Paperwork Reduction Act of 1980 and found to contain no new or modified form, information collection and/or record keeping, labeling, disclosure, or record retention requirements, and will not increase or decrease burden hours imposed on the public.

#### **VI. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules**

9. None

**Report to Congress:** The Commission will send a copy of this *Report and Order*, including the FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, *see* 5 U.S.C. § 801(a)(1)(A). In addition, the Commission will send a copy of this *Report and Order*, including FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register. *See* 5 U.S.C. §604(b).

**APPENDIX B****FINAL RULES**

Part 90 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

1. The authority citation for Part 90 continues to read as follows:

**Authority: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 303(g), 303(r), and 332(c)(7).**

2. Section 90.20 is amended by revising paragraph (e)(6) to read as follows:

**§ 90.20 Public Safety Pool**

\* \* \* \* \*

(e) \* \* \*

(6) The frequency 173.075 MHz is available for stolen vehicle recovery systems on a shared basis with the Federal Government. Stolen vehicle recovery systems are limited to recovering stolen vehicles and are not authorized for general purpose vehicle tracking or monitoring. Mobile transmitters operating on this frequency are limited to 2.5 watts power output and base transmitters are limited to 300 watts ERP. F1D and F2D emissions may be used within a maximum authorized 20 kHz bandwidth. Transmissions from mobiles shall be limited to 200 milliseconds every 10 seconds, except that when a vehicle is being tracked actively transmissions may be 200 milliseconds every second. Alternatively, transmissions from mobiles shall be limited to 1800 milliseconds every 300 seconds with a maximum of six such messages in any 30 minute period. Transmissions from base stations shall be limited to a total time of one second every minute. Applications for base stations operating on this frequency shall require coordination with the Federal Government. Applicants shall perform an analysis for each base station located within 169 km (105 miles) of a TV Channel 7 transmitter of potential interference to TV Channel 7 viewers. Such stations will be authorized if the applicant has limited the interference contour to fewer than 100 residences or if the applicant:

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